Cover and Program

The Tenth International Symposium on Mitigation of Geo-disasters in Asia

Sendai-Bandai-Kamikochi-Kyoto-Matsue, Japan

3-9 October 2012

Organized by

Department of Geoscience, Shimane University, Japan
Disaster Prevention Research Institute, Kyoto University, Japan
School of Environmental Design, Kanazawa University, Japan

Sponsored by

College of Geol. Engr, & Geomatics, Chang'an University
Dept. Civil Engr., Kunming Science & Technology University
Northeast Forestry University, Harbin China
Dept. of Civil Engr., Universitas Gadjah Mada, Indonesia
College of Construction Engr., Jilin University, China
Dept. of Civil Engr., Hong Kong University, China
Dept. of Civil Engr., Taiwan University, Taipei, Taiwan
Dept. of Geology, Tribhuvan University, Nepal
Far-Eastern National Technical University, Russia
University of Shahid Madani, Iran
Chinese Institute of Disaster Prevention
San'in Disaster Prevention Forum, Shimane University

Time schedule for

The 10th International Symposium on Mitigation of Geo-disaster in Asia

3-9 October 2012, Sendai-Kyoto-Matsue, Japan

3th Oct	12:00~18:00	Registration (**Toyoko-inn Hotel Sendai-chuo, Sendai City**)
	18:30~20:00	Ice break party
Toyoko-inn Hotel Sendai chuo: http://www.toyoko-inn.com/hotel/00058/index.html **Yang Hufeng**: 080-4559-2885, **Sonoyama Tomokazu**: 090-6844-0453		
4th Oct	8:30~12:00	Field trip on disaster site of Tsunami, landslide, and construction damage caused by 2011.3.11 earthquake (Guided by Prof. T. Miyagi, Tohoku Gakuin University)
	12:00~13:00	Lunch time
	13:00~16:00	Bus to **Mt. Bandai**
5th Oct	7:00~8:00	Morning meeting and Breakfast
	8:30~11:30	Field trip around **Mt. Bandai**
	11:30~12:30	Lunch time (lunch box)
	12:30~18:30	Bus to **Takayama city**
	18:30	**Muraiya Ryokan Hotel** (dinner and hot spa)
6th Oct	~8:30	Breakfast
	8:30~9:30	Bus to **Mt. Hotaka-take**
	9:30~12:00	Field trip, Technical visiting to counter-measure works of debris flow and research facilities of DPRI, Kyoto university (Guided by Assoc. Prof. D. Tsutsumi)
	12:00~13:00	Lunch time (lunch box)
	13:00~18:00	Bus to **Kyoto and Uji**
	18:00	Arriving in **Kyoto and Uji**
7th Oct	8:30	Arriving in DPRI, Kyoto university by bus or train
	8:45~12:30	**Kyoto symposium**
	12:30~13:30	Lunch time
	13:30~18:30	Bus to **Matsue**
	18:30~	Matsue (Beer friendly-night)
8th Oct	9:00~18:00	**Matsue symposium**
	19:00~21:00	Yushien Banquet
9th Oct	9:00~18:30	Visiting to world heritage of **Iwami Silver Mountain**
	Closing	

Program of Kyoto Symposium

The Tenth International Symposium on Mitigation of Geo-disasters in Asia

Place: Uji Campus, Kyoto University
Date: 7 October 2012

Time		Agenda
08:45 – 10:00 **Invited Lecture (Comprehensive Research Bldg.)** **Chairpersons: Masakatsu Miyajima**		
8:45 – 9:20		Long-term management of Kosi River Basin Balmukunda Regmi
9:20-10:00		The Application of Monitoring and Early Warning System of Rainfall-triggered Debris Flow at Merapi Volcano, Central Java, Indonesia Faisal Fathani
10:00 – 10:15		Coffee Break
Room:	10:15 – 11:00 **Presentation, Chairperson: Ko-Fei Liu**	
A	10:15 – 10:30	Assessment Social Impact of debris flow disaster by Social Vulnerability Index Ko-Fei Liu, Hsin-Chi Lee, Ying-Hsin Wu
	10:30 – 10:45	The effect of moisture content on the shearing strength of loess Xianli Xing
	10:45 – 11:00	Cut layer rocky landslide development mech. in Lesser Mt. Khingan Hua Jiang, Zhaoguang Hu, Ying Guo, Chunjiao Wang, Wei Shan
	11:00 – 11:15	Coffee Break
	11:15 – 12:00 **Presentation, Chairperson: Netra Prakash Bhandary**	
	11:15 – 11:30	In-situ Observation on Rainfall Infiltration in Loess Ping Li
	11:30 – 11:45	Influence of reservoir water level variation on slope in lab. flume test Hufeng Yang, Fawu Wang
	11:45 – 12:00	A loess landslide caused by annual water leaking in winter Changliang Zhang
B	10:15 – 11:00 **Presentation, Chairperson: Tonglu Li**	
	10:15 – 10:30	Investigation of earthquake-rainfall triggered landslide in Tandikat,West Sumatra, Indonesia Fikri Faris, Fawu Wang, Faisal Fathani
	10:30 – 10:45	Comparison between FLO-2D and DEBRIS-2D on the application of assessment of debris flow hazards Ko-Fei Liu, Ying-Hsin Wu
	10:45 – 11:00	Seepage properties of the loess under different consolidation pressures Xiaoyan Lin
	11:00 – 11:15	Coffee Break
	11:15 – 12:00 **Presentation, Chairperson: Ranjan Kumar Dahal**	
	11:15 – 11:30	Experimental and numerical analysis of mechanical interaction of masonry bricks and mortar Reza Amiraslanzadeh, En Lin, Toshikazu Ikemoto, Masakatsu Miyajima
	11:30 – 11:45	Experimental study on landslide dam-break due to internal erosion and piping using monitoring sensors Austin Chukwueloka Okeke, Fawu Wang, Yasuhiro Mitani, Yohei Kuwada
	11:45 – 12:00	The reliability analysis of the loess slope near the Shuidonggou landslide Lijuan Huang
	12:00 – 12:15	Landslide Problem along highway of Central Vietnam Ngoc Ha Do, Fawu Wang, Kyoji Sassa

Program of Matsue Symposium

The Tenth International Symposium on Mitigation of Geo-disasters in Asia

Place: Shimane Civil Center, Matsue （島根県民会館）
Date: 8 October 2012

Time		Agenda
09:00 – 09:30		**Opening Ceremony** ➢ **Welcome Speech by Prof. J. Takeuchi, the Vice President of Shimane University** ➢ **Speech by Prof. emeritus M. Kitaura, the first main organizer of the symposium of MGDA** ➢ **Awarding Ceremony of the Appreciation Awards** ➢ **Introduction of the Main guests and participants**
09:30 – 11:50 **Keynote Speech (Room: Main Conference Room)** **Chairpersons: Tetsuya Sakai, Balmukunda Regmi**		
09:30 – 10:05		Some interesting geo-sites in Shimane Prefecture, Japan Prof. emeritus Y. Sawada (Shimane University, Japan)
10:05 – 10:40		Observations on landslides movements in residential slopes induced by the 2011 off the Pacific coast of Tohoku Earthquake Prof. T. Kamai (Kyoto University, Japan)
10:40 – 11:15		Large scale simulation of watershed mass transport - A case study of Tseng-Wen Watershed Ko-Fei Liu, Yi-Chin Chen, Ying-Hsin Wu (National Taiwan University)
11:15 – 11:50		Damage by the 2011 Great East Japan earthquake and tsunami Prof. M. Miyajima (Kanazawa University, Japan)
11:50 – 13:00		Lunch Break
13:00 – 14:10 **Keynote Speech (Room: Main Conference Room)** **Chairpersons: Faisal Fathani**		
13:00 – 13:35		The tectonic, climatic cycles and the geological disasters on the Chinese Loess Plateau Prof. Tonglu Li (Chang'an University, China)
13:35 – 14:10		Geo-disaster and its mitigation in Nepal Prof. Ranjan Kumar Dahal (Tribhuvan University, Nepal)
14:10 – 14:20		Coffee Break
Room:	14:20 – 16:35	**Presentation**
A	**Chairpersons: Masaho Yoshida, Yahong Deng**	
	14:20 – 14:35	Relationship between damage of levee and its resonant frequency in Shinano River subjected to Niigata Chuetsu Earthquake in 2004 T. Takahara, T. Sugimoto
	14:35 – 14:50	Estimation of the most suitable window size of slope relief for the

(Main conference room)		assessing scale of landslides due to the earthquake N. Takezawa, T. Uchida, T. Ishiduka, S. Honma, Y. Kobayashi
	14:50 – 15:05	The inverse analysis of strength parameter in Shanxi Jijiayuan cutting loess slope Yu Xi
	15:05 – 15:20	Microtremor measurement-based prediction of ground shaking in Kathmandu Valley of Nepal Netra Prakash Bhandary
	15:20 – 15:35	Simple demonstration models of geotechnical engineering Shunitsu Fujii, Ryuta Saito
	15:35 – 15:50	Coffee Break
	Chairpersons: Shih-Chung Kang, Yongzhi Wang	
	15:50 – 16:05	Proposal of liquefaction countermeasure technique by log piling for residential houses Masaho Yoshida, Masakatsu Miyajima, Atsunori Numata
	16:05 – 16:20	Evidence of rapid evolution of a submarine debris flow from a turbidity current on slope: an example from the Miocene Ushigiri Formation, Shimane, Japan T. Sakai, M. Maruyama
	16:20 – 16:35	Experimental study of submarine landslides -Motion mechanism and impact force to cable- Yohei Kuwada, Fawu Wang, Mitsuki Honda, Tomokazu Sonoyama
B (Room 303)	**Chairpersons: Kensaku Matsumoto, Changliang Zhang**	
	14:20 – 14:35	Lesson Learned Center for Disaster Prevention and Management Shih-Chung Kang, Chao-Chung Yang, Ruei-Shiue Shiu, Jihn-Sung Lai
	14:35 – 14:50	Mechanism and Stability Assessment of The Niujiagou Landslide, Shaanxi. China Yongzhi Wang
	14:50 – 15:05	Mechanism of permafrost landslide based on GPS and resistivity surveying Wei Shan, Zhaoguang Hu, Hua Jiang, Ying Guo, Chunjiao Wang
	15:05 – 15:20	Numerical analysis of Mud flow using VOF scheme with Non-Newtonian model Kensaku Matsumoto, Masayoshi Maruyama
	15:20 – 15:35	Examination of flowing groundwater condition on riverbank bed using One-meter Depth Temperature and Multipoint Temperature Logging Tsuyoshi Harasawa, Kensaku Matsumoto, Atsuo Takeuchi
	15:35 – 15:50	Coffee Break
	Chairpersons: Toshiyuki Takahara	
	15:50 – 16:05	Seismic estimation of a stone lantern using 3-D DEM analysis and shaking table test Akira Murata, Naohiro Ito, Ryo Shimizu, Masakatsu Miyajima
	16:05 – 16:20	The mechanism of loess landslide triggered by irrigation

		Jifei Zhao
	16:20 – 16:35	Study of the risk communication in the Geo-disaster -Report of the local government questionnaire result- Hisayuki Ishizuka, Masakatsu Miyajima
C (Room 307)	**Chairpersons: Ko-Fei Liu, Akira Murata**	
	14:20 – 14:35	Inverse analysis of loess strength parameters of Tianshui area Chao Liu
	14:35 – 14:50	Monitoring and experiment on the effect of freeze-thaw on soil cutting slope stability Ying Guo, Wei Shan
	14:50 – 15:05	Study of non-uniformity coefficient considering micro topography for seismic design of water pipes Kazutaka Shichiroumaru, Masakatsu Miyajima
	15:05 – 15:20	Study on Behavior of Ductile Iron Pipelines Buried across a Fault Shougo Kaneko, Masakatsu Miyajima
	15:20 – 15:35	In-situ Monitoring of Tiered Reinforced Earth Retaining Wall for A Loess Slope Wei Qi
	15:35 – 15:50	Coffee Break
	Chairpersons: Netra Prakash Bhandary	
	15:50 – 16:05	The mechanism of a rapid long run-out loess landslide Peng Wang
	16:05 – 16:20	Instability of mud flow by river morphological variation Ko-Fei Liu, Shih-Chao Wei
	16:20 – 16:35	Exploration of landslide dam structure by Micro-tremor array survey method Yasuhiro Mitani, Fawu Wang, Austin Chukwueloka Okeke, Yohei Kuwada, Hufeng Yang, Fikri Faris
Closing Ceremony (16:40-17:10) (Main conference room)		Quick report of the 2012 North West Iran Earthquake Prof. M. Miyajima (Kanazawa University, Japan) Closing Speech Prof. F.W. Wang (Shimane University, Japan)
17:20 – 18:00		Relaxing time: Sunset in Shinji Lake
Banquet (19:00-21:00) (Japanese Garden Restaurant: Yushi-en)		Appreciation Speech by Prof. Y. Sampei, the Deputy Dean of Interdisciplinary Faculty of Science and Engineering, Shimane University Ceremony for Best Paper Award, Excellent Research Award, and Promising Young Scholar Award

Toyoko-inn Hotel Sendai chuo

4 minutes walking to south direction from Sendai station

Address: Miyagi prefecture, Sendai city, Aoba, Chūō 1-1-10

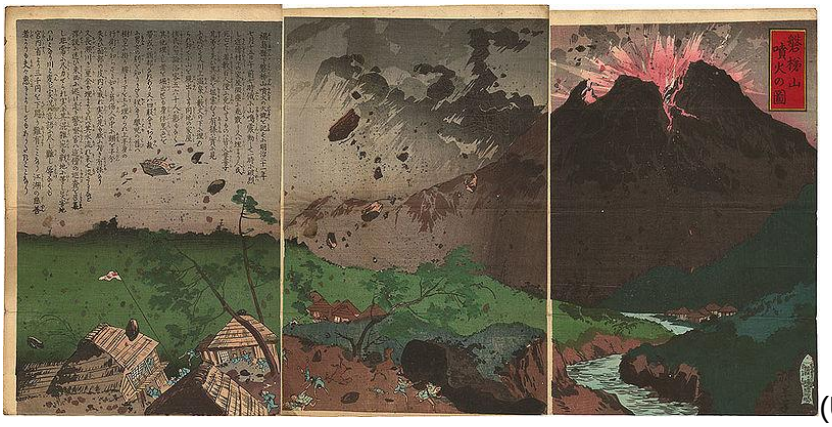
TEL：022-726-1045　　FAX：022-726-1046

http://www.toyoko-inn.com/hotel/00058/index.html

Mt. Bandai (1816m, Fukushima prefecture)

Mount Bandai (磐梯山 Bandai-san), also known as Aizu-Bandai-san (会津磐梯山), Aizu-Fuji (会津富士), and Aizu-ne (会津嶺), is a stratovolcano in Fukushima Prefecture, Japan. In a major eruption on July 15, 1888 the north and east parts of the caldera collapsed in a massive landslide, forming two lakes, Hibara-ko and Onogawa-ko, as well as several minor lakes called Goshiki-numa, or the 'Five Coloured Lakes'.

The lake district formed by this cataclysm became known variously as Urabandai or Bandai-kōgen, and has become a tourist destination. This last eruption was particularly tremendous and completely reshaped its vicinity. All the surrounding villages were destroyed, killing 461 people and burning another 70[citation needed] Volcanic debris blocking nearby rivers created lakes and ponds. (From Wikipedia)


(Ukiyoe-1888 eruption)

http://lsweb1.ess.bosai.go.jp/pdfview/series06/pdf5640/015.pdf (Landslide map)

http://www.kubota.co.jp/urban/pdf/15/pdf/15_2_6.pdf (Geological map)

Mt. Hotaka (3190m, Gihu prefecture)


Mount Hotaka (穂高岳 Hotaka-dake), also known as Mount Hotakadake, is one of the 100 Famous Japanese Mountains, reaching a height of 3,190 m (10,466 ft). It is situated in Japan's Hida Mountains and all its major peaks besides Mount Maehotaka, lie on the border between the cities of Matsumoto, Nagano Prefecture, and Takayama, Gifu Prefecture. This mountain is located in Chūbu-Sangaku National Park.

The peaks of Okuhotaka, Karasawa, Kitahotaka, Maehotaka and Nishihotaka are called the Hotaka Mountains. The highest peak in this range, and also the tallest mountain in both Nagano and Gifu prefectures, is Mount Okuhotaka. Mount Hotaka is also referred to as the "Leader of the Northern Alps". (From Wikipedia)

http://www.okuhida-dsl.com/kansoku/EHodaka.html (DPRI, Kyoto University)

http://www.youtube.com/watch?v=izqEIiBoGso (Movie of the debris flow)

6th October

Field trip, Technical visiting to counter measure works of debris flow and research facilities of DPRI, Kyoto University.

1. **Kamikochi**: Observation site of debris flow in Kamikamihorisawa

2. **Foot of Mt. Yake**: Flowing sand observation of Ashiaraidani(near observatory) and the sediment production site

3. **Control of soil erosion debris-slide protection facility around Kamada-river**: Jigokudaira dam, Doukanmatsu dam, and Shinobu sabo dam.

Izumo Taisha Shrine



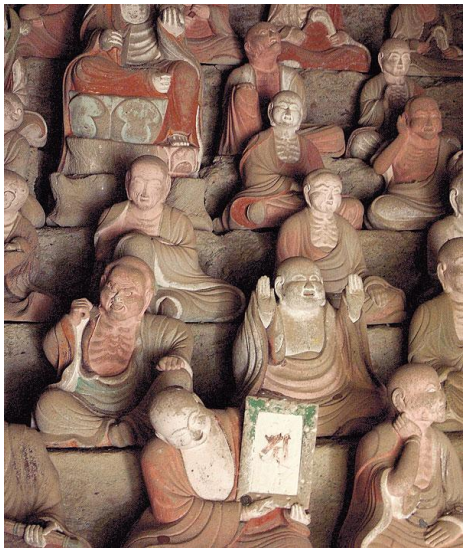

Izumo Taisha Shrine is dedicated to Okuninushi no Mikoto and is famous for the god of marriage. This shrine has such an old history, even its establishment was written in myth.

In the Japanese old calendar, October is called "Kannazuki" which means the month of the absence of Gods and it is based on the Shinto belief that in October all gods congregate at Izumo Taisha Shrine for their yearly meeting, so their home shrine lies empty.

Inside the extensive premises, there are "Honden" (the main hall) which is constructed in "Taisha-zukuri" (the oldest style of shrine architecture) and is designated as a national treasure. "Haiden" (the worship hall) built in the compromising style of "Taisha-zukuri" and "Kirizuma-zukuri" (the gabled roof), and other numerous buildings such as "Kaguraden" (Shinto music and dance stage) and "Shinkoden" (the treasure house), create a solemn atmosphere. Among them all, the giant "Shimenawa" sacred ropes on the wall of the "Kaguraden" and "Haiden" attract visitor's attention with their lengths and weights of 13 meters, 5 tons, and 8meters, 1.5 tons respectively.

Currently, repair of the "Honden" is being carried out from April 2008 to 2013. Until the completion of the repairs, scheduled to be completed in May 2013, the "Haiden" will be used as the main hall.

Iwami Silver Mountain (Mine)



The Iwami Ginzan (石見銀山) was a silver mine in the city of Ōda, Shimane Prefecture, on the main island of Honshū, Japan. It was the largest silver mine in Japanese history. It was active for almost four hundred years, since its discovery in 1526 until its eventual closing in 1923. It was added to the World Heritage List in 2007. It was developed in 1526 by Kamiya

Jutei, a Japanese merchant. It reached its peak production in the early 17th century of approximately 38 tons of silver a year which was then one third of the world's production.

Silver from the mine was used widely for coins. It was contested fiercely by warlords until the Tokugawa Shogunate won control of it in 1600 as a result of the Battle of Sekigahara in 1600. It was later secured by fences and barricaded by pine trees. Yamabuki Castle was built in the centre of the complex.

Silver production from the mine fell in the nineteenth century as it had trouble competing with mines elsewhere. Then in exchange for silver some kinds of mineral like copper had been mainly mined in the mountain. The mine was eventually closed in 1923.

Iwami Ginzan Silver Mine played a pivotal role in East Asian trade, where silver was the key currency. In Europe and China, the mine had been known as the largest silver mine that could compare with the Cerro Rico in Potosí (now the World Heritage Site in Bolivia).

In foreign countries, because the silver mined at Iwami Ginzan was very high quality, it came to be known as one of the Japanese brand of silver called "Soma Silver". The name derived from the village of Sama (Soma) in which the mine was. This silver was given the highest trading credit in East Asia. From 17th century, the silver coin made of the silver of the mine had been traded as not only one of the basic currencies in Japan but also as the currency in the trade with China, Portugal and the Netherlands. (Portugal had traded with Japan from late 16th century. Netherlands had traded with Japan from 17th century.)

The prosperity of the mine can be known that it was indicated in the maps at the time as the "Silver Mine Kingdom". With the progress of navigation, the monarchs of Western Europe had gotten a lot of maps imported from the Muslim world and had made their own maps. The fleet with the maps came to India, China and Japan to trade goods and get the silver mined. The feudal lords who governed the mine traded with these countries actively.

Visiting to World Heritage

■**Destination** Izumo Taisha Shrine, Japan Myth Expo 2012, Iwami Silver Mine

■**Date** **9th October, 2012 (Tuesday)**

■**Schedule**

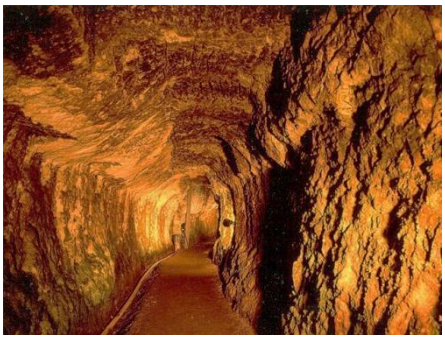
08:45 Hotel

09:00 Departure

10:00 Izumo Taisha Shrine

10:30 Japan myth expo 2012 in Shimane (**free time**)

11:30 Departure



12:00 Lunch time

13:00 Departure to Iwami Silver Mountain

14:00 Iwami Silver Mountain

17:00 Departure to Matsue

18:30 Matsue

■**Information [URL]**

Izumo taisha shrine [http://www.izumooyashiro.or.jp/]

Japan myth expo [http://en.shinwahaku.jp/]

Iwami silver mine [http://ginzan.city.ohda.lg.jp/wh/en/index.html]